

Factors that influence women's choice of place of delivery in Koza, Mai'adua Local Government Area of Katsina State

Bulus Inusa^{1*}, Afoi B Barry¹, Nasa G. Yashi², Joseph Jonathan Gimba³, Samuel Godwin Atayi¹ and Obidigbo Amaka⁴

¹Department of Nursing Sciences, Faculty of Health Sciences, Bingham University Karu, Nassarawa State, Nigeria.

²Barau Dikko University Teaching Hospital, Kaduna State, Nigeria.

³Kaduna State College of Nursing and Midwifery, Kafanchan, Nigeria.

⁴College of Nursing and Midwifery Kafanchan, Kaduna State, Nigeria.

*Corresponding author. Email: bulusinusa@gmail.com

Copyright © 2022 Inusa et al. This article remains permanently open access under the terms of the [Creative Commons Attribution License 4.0](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received 8th December, 2021; Accepted 31st January, 2022

ABSTRACT: In sub-Saharan African countries, less than 50% of women do not have the opportunity to be attended to by skilled personnel during child birth. The study aimed to assess the factors that influence women's choice of place of delivery in Koza, Mai'adua Local Government Area of Katsina State. This study employed a descriptive cross-sectional survey design using quantitative data collection and analysis methods. Data collection was carried out by going house-to-house and to get responses from the mothers using a closed-ended questionnaire. The research questions were analyzed using frequency distribution tables and percentages. The hypotheses were tested with the use of Chi-square using the probability of $p \leq 0.05$ as a statistically significant level. The analysis was done using International Business Machine Statistical Product and service Solution (IBM SPSS version 26). The results show that majority of the women (46.6%) delivered at home, 23.44% at the hospital, while 37.2% delivered at traditional birth attendants' places. The factors that influence the place of choice are orders from husband and household head 94(36.72), long distance to the health facilities 66(25.79%), lack of money to pay for transport 53(20.70%) and unfriendly experience with the health care providers 43(16.79%). There is statistically significant relationship between respondent age, level of education and the place of choice of place of delivery ($p < 0.05$). In conclusion, there is a need for health care providers to double their effort to educate the women and their spouses about birth preparedness and the importance of health care delivery.

Keywords: Koza, place of delivery, women's choice.

INTRODUCTION

In developing nations, a large number of maternal death and a low level of maternal healthcare-seeking behavior has been attributed to low proportions of antenatal care utilization and low deliveries attended by a skilled-personal (Christiana, et al., 2010; Sibiya et al., 2018). Proper antenatal care (ANC) enhance the quality of child delivery outcome couple with a good choice of place of delivery as recommended by health personal (Raatikainen et al.,

2007; Chen, et al., 2007; Kuhnt and Vollmer, 2017).

According to Alkema et al. (2016) and WHO et al. (2016), more than 302,950 women die every year from pregnancy-related morbidity and mortality globally, of which 99% of deaths occur in low-income countries. Of those, 50% occur in sub-Saharan Africa. Maternal mortality indicators remained relatively high for sub-Saharan African countries, including Nigeria (Enuameh et al., 2016).

Nigeria maternal mortality rate is accounted for about 20 per cent of the global maternal deaths, this, show casing Nigeria as one of the country with the highest maternal mortality rate (Sule et al., 2021). Despite many efforts to address the situation through high-level, sustained political commitment by professionalizing delivery care, and by improving health system infrastructure to respond to obstetric complications (Yalem, 2010), the situation has not been successful. Research has shown that one of the main contributing factors for the high rate of maternal mortality in developing nations has been the enduring practice of delivery outside of health care facilities (Mahama, 2019). The presence of a skilled attendant may prevent the major causes of maternal mortality during childbirth in low-income countries (Ngowi et al., 2017).

According to Garba et al. (2011), in a study carried out to assess maternal health-seeking behavior among the Kambari residents of Niger State Nigeria, It was revealed that 56% delivered their babies at home and 70.2% deliver in places ordered by their household heads/husbands as they were the ones who paid for the health care. Work done in Eastern Ethiopia on factors affecting the choice of delivery place among women; the finding indicates that more than half of the women (58.7%) prefer home delivery and 41.3% health care facilities (Mezmur et al., 2013). Research carried out by Kucho and Mekonnen (2017) in southern Ethiopia, revealed that three hundred and two (67.6%) delivered at home at their last pregnancy and the rest 145(32.4%) at the primary health facility. Ngowi et al. (2017) assessed women's determinant factors influencing preferred place of delivery in Tanzania; the findings show that a large percentage of the respondents 629(78.6%) delivered in the health care facility, while 171(21.4%) delivered at home/on the way to the hospital. Sahoo et al. (2015) explore the topic of socio-demographic factors still predict the choice of place of delivery; the result of the study revealed that 113 (37.7%) of the mothers' deliveries were at home while 187 (62.3%) occurred in a health facility. Also, the finding shows that there is a significant association between educational levels with the choice of place of delivery. In another study by Envuladu et al. (2013) to evaluate the factors that determine the choice of place of delivery among pregnant women in the Russian village of Jos North, Nigeria. The result of the study shows that the factors that influence women's choice of place of delivery include hospital cost (93.6%), an unfriendly attitude of health care workers (61.4%), and distance from residence to health facility (36.4%). Johnson et al. (2020) in their word choice and determinants of delivery location among childbearing mothers; the result indicates that distance (45.4%), cost (34.6%) and attitude of healthcare workers (26.5%) has been the factors that determine the choice of place of delivery. The finding also shows that there is a significant relationship between the level of education and the utilization of healthcare facilities for delivery. Mahama et al. (2019) find out that, the variables

that significantly affect the choice of place of delivery among study participants were found to be educational level.

Statement of the problem

Despite the global awareness programs and other initiatives such as Sustainable Development Goals (SDG) put in place by the World Health Organization (WHO) to achieve a global reduction in maternal mortality by the year 2030, maternal mortality has been on the increase. The continuing high rates of maternal death ratio in Nigeria remain worrisome. Two third of pregnant women received antenatal care, and 40% of the deliveries were assisted by skilled provider, remains low by international standard, according to the 2018 National Demographic and Health Survey (NDHS), but with regional variations, the northern part of the country having the highest. In this circumstance, most of the home deliveries are not attended to by skilled personnel. Home deliveries especially with no skilled attendants are associated with a high risk of pre-natal and maternal deaths. It has been observed in Koza that the majority of their women attend antenatal care but their turn out in labor is very low except in cases of emergencies and when their conditions are critical. Based on the above statement the researchers seek to assess the factors that influence women's choice of place of delivery at Koza community, the gap which this study intended to bridge.

Research questions

1. What is the choice of places of delivery among women in the Koza community?
2. What are the factors that influence the choice of places of delivery among women in the Koza community?

Research hypothesis

H₀₁: There is no significant relationship between respondent's level of education and their place of delivery.

H₀₂: There is no significant relationship between respondent's Age and their place of delivery

METHODOLOGY

The study was conducted in Koza wards. A cross-sectional descriptive study was used in this study. Koza ward is found in the Northern part of Mai'adua Local Government Area (LGA) as it is about 20 Km to Kongolam, a settlement in Mai'adua that shares a boundary with the Niger Republic, which has borders with Daura LGA in the south, Mashi and Dutsi LGA in the west, Zango LGA in the East. It has an area of 528 m² and a population of 201,178 (2006 census). People of Koza are mainly Hausa-Fulani

(Muslims), who are mainly farmers that farm both in dry and rainy seasons with only a few educated. There is a model primary school, and a primary health care facility at the heart of Koza town with midwives, community health extension worker (CHEWS), traditional birth attendants, and a community health officer in charge. The study population was women of childbearing age who have delivered in the previous 12 months, and hail from Koza, are approximately 750. Using Krejcie and Morgan (1970), a sample of 280 respondents was selected for the study. A purposive sampling technique was used. The main instrument for data collection was a self-structured questionnaire. The questionnaire was self-developed which contained close-ended questions on socio-demography data of the women, decision-making process as it relates to antenatal, intra-natal, and postnatal health care services, and women's health care practices. It was scrutinized by some experts in the field, and modifications were made. Permission was obtained from the Health Department of Mai'adua Local Government Area of Katsina State. Also, permission was obtained from the village head of Koza as well as supervisor of the primary health centre. The purpose of the study was explained to the respondents and an inform consent was obtained from respondents themselves before the data collection. Data collection was carried out by going house-to-house and interviewing the mothers using a structured questionnaire, selected randomly. Two hundred and fifty-six (256) out of 280 questionnaires were returned. The research questions were analyzed using percentages. The hypotheses were tested with the use of Chi-square using the probability of $p \leq 0.05$ as a statistically significant level. The analysis was done using IBM SPSS version 26.

RESULTS

From Table 1, the majority of the respondents (21.88%) were between 25 to 31 years, 18.75%, and 17.58% were aged 18 to 24 and 32 to 38 years, respectively. 16.40% were less than 18 years, 13.28% were in the range 39 to 45 years and 12.11% were 46 years and above. The findings also revealed that most (91.80%) of the respondents were Muslims and 8.20% belonged to other religions with none being a Christian. It could also be seen in the Table 1 that, majority of the respondents (55.47%) were married, 12.89% were divorced, 14.06% were separated, 8.20% were widowed and 9.38% were single. Also, most of the respondents (34.38%) had no formal education, 26.95% had only primary education and 18.36% had secondary education, 11.33% had tertiary education, and 8.96% Quaranic education. From the findings, the majority of the respondents (30.08%) were housewives, 28.52% farmers, 20.70% traders, 11.75% were civil servants, and 8.98% were retirees.

Table 2 showed that the majority of the respondents

Table 1. Socio-demography data.

Characteristics	Frequency (n)	Percentage (%)
Age (Years)		
<18	42	16.40
18-24	48	18.75
25-31	56	21.88
32-38	45	17.58
39-45	34	13.28
>46	31	12.11
Total	256	100
Religion		
Islam	235	91.80
Others	21	8.20
Total	256	100
Marital status		
Single	24	9.38
Married	142	55.47
Divorced	33	12.89
Separated	36	14.06
Widowed	21	8.20
Total	256	100
Level of education		
None	88	34.38
Primary	69	26.95
Secondary	47	18.36
Tertiary	29	11.33
Quaranic	23	8.98
Total	256	100
Occupation		
Housewife	77	30.08
Farming	73	28.52
Trading	53	20.70
Civil Service	30	11.72
Retiree	23	8.98
Total	256	100

(41.01%) had their last babies at home, 35.55% delivered at traditional birth attendant's place, and 23.44% delivered in the hospital. Most of the respondents (41.02%) receive postnatal care in the hospital/clinic, 25.39% were managed at home, and 19.92% consulted traditional birth attendants while 13.67% consulted traditional healers.

The findings further indicate that 36.72% of the respondents were engaged in the above activities as ordered or directed by their household heads or husbands, 25.79 and 16.79% indicated that distance from their place of residence and attitude of modern health workers respectively as reasons for resorting to utilizing alternative

Table 2. Place of delivery and postnatal care.

Parameters	Frequency (n)	Percentage %
Place of delivery		
Home	105	41.01
Hospital	60	23.44
Traditional birth attendant's place	91	35.55
Total	256	100
Place of postnatal care		
Managed at home	65	25.39
Hospital/clinic	105	41.02
Consult traditional healers	35	13.67
Consult traditional birth attendants	51	19.92
Total	256	100

Table 3. Factor influencing the place of delivery of respondent.

Characteristics	Frequency (n)	Percentage (%)
Distance from place of residence	66	25.79
Financial reasons	53	20.70
Attitude of health workers	43	16.79
Orders from household heads (husbands)	94	36.72
Total	256	100

Table 4. Chi-square test of association between age highest education and place of delivery (n = 256).

Variables	At home	Hospital	TBA	Total	df	χ^2	P-value
Age							
12-17	42	0	0	42	10	360.65	0.00*
18-24	48	0	0	48			
25-31	15	41	0	56			
32-38	0	19	26	45			
39-45	0	0	34	34			
46-52	0	0	31	31	8	398.09	0.00*
Total	105	60	91	256			
Highest education							
None	88	0	0	88			
Quaranic	0	0	29	29			
Primary	17	52	0	69			
Secondary	0	8	39	47			
Tertiary	0	0	23	23			
Total	105	60	91	256			

*Given the result of the chi-square test, it was observed that some cells (50.0%) have expected count less than 5. Hence Fisher exact was used to calculate the chi-square for age and highest level of education status only. TBA = Traditional birth attendance

methods of care while 20.70% claimed it was because of financial constraints (Table 3).

The findings also showed that there is statistical significance association between age, educational status and place of Delivery (Table 4). The calculated p level of

significance value of 0.00 was found to be less than 0.05 alpha level of significance. Null hypothesis rejected. Therefore, there is significant association between age, educational status and place of delivery in the Koza community.

DISCUSSION

The findings on the choice of places of delivery indicated that most of the women among the population of respondents (41.01%) delivered at home, while (35.55%) delivered at traditional birth attendants' places, while (23.44%) delivered in the hospital. The finding is incongruent but higher with that of Kucho et al. (2017) who found that 302(67.6%) delivered at home at their last pregnancy and the rest 145(32.4%) at the primary health facility. The finding is also in line with that of Mezmur et al. (2013) who indicated that more than half of the women (58.7%) prefer home delivery and 41.3% health care facilities. But the finding is in contrast to the observation of Ngowi et al. (2017) which reveals a large percentage of the respondents 629(78.6%) delivered in the health care facility compared to 171(21.4%) who delivered at home/on the way to the hospital. The difference between the finding of this study and the observation of Ngowi et al. (2017) could be the fact that his observation was made in an urban area where the people there are highly enlightened on reproductive issues while the observation made in this study was made in a rural community with fewer people that are enlightened on reproductive issues.

Findings on factors that influence the choice of place of delivery showed that orders from husband and household head (36.72%), long distance to the health facilities 66(25.79%), lack of money to pay for transport 53(20.70%) and unfriendly experience with the health care providers 43(16.79%) are the determinant. The findings support the result of Envuladu et al. (2013) who reported hospital cost (93.6%), an unfriendly attitude of health care workers (61.4%), and distance from residence to health facility (36.4%) as the factors that influence the choice of place of delivery among women. The finding is also consistent with the report of Johnson et al. (2020) in which distance (45.4%), cost (34.6%), and attitude of healthcare workers (26.5%) influence choice of place of delivery.

Also, the results on the relationship between respondent's level of education and their place of delivery in the Koza community show that there is a statistically significant relationship between the level of education and place of delivery in the Koza community. The result showed some level of health-seeking behavior, as the education level increase. The result is consistent with that of Johnson et al. (2020), Garba et al. (2011) and Mahama et al. (2019) whose findings showed that there is a significant relationship between the level of education and utilization of healthcare facilities for delivery.

Conclusion

The findings of the study show that orders from the husband and household head were the main factor that influence the women of Koza's choice of place of delivery. The finding shows that the majority of the women deliver

at home. The study finds that there is a significant relationship between respondent's level of education and where they deliver their babies.

Limitations

The study did not include other community around Koza who, visit the health facility, so it cannot be generalize. The study used a self-report questionnaire to assess choice of place of delivery this method has the disadvantage of recall bias and eliciting only socially acceptable response, hence, it may under estimated or overestimated the level of their report in the study.

Recommendations

Based on the results obtained in this study, the following recommendations are put forward:

1. There should be a compulsory girl child education, up to a tertiary level, this will go a long way to improve the women's ability to take quality decisions when pregnant and during delivery to prevent any complication that may arise.
2. There is a need for health care providers to double their efforts to educate the women and their spouses about birth preparedness and the importance of health care delivery, to prevent maternal and child morbidity and mortality in Koza communities.
3. The empowerment of females, attitude of health care workers, and distance of health facilities to the people in communities should be addressed to improve health-seeking behavior, and prevent mother and child morbidity and mortality.
4. The issues about nursing ethic should be emphasis by the hospital management, as in regard to their conduct to the patients in Koza communities.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

REFERENCE

- Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A. B., Gemmill, A., Fat, D. M., Boerma, T., Temmerman, M., Mathers, C., & Say, L. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. *The Lancet*, 387(10017), 462-474.
- Chen, X-K., Wen, S., W, Yang, Q., & Walker, M., C. (2007). Adequacy of prenatal care and neonatal mortality in infants born to mothers with and without antenatal high-risk

- conditions. *Australian and New Zealand Journal of Obstetrics and Gynecology*; 47(2), 122-127.
- Christiana, R., T, Michael, J., D, Christine, L., R. (2010). Factors associated with underutilization of antenatal care services in Indonesia: results of Indonesia demographic and health survey 2002/2003 and 2007. *BMC Public Health*, 10, 485.
- Enuameh, Y. A. K., Okawa, S., Asante, K. P., Kikuchi, K., Mahama, E., & Ansah, E. (2016). Factors influencing health facility delivery in predominantly rural communities across the three ecological Zones in Ghana: A Cross-Sectional Study. *PLoS ONE* 11(3), e0152235.
- Envuladu, E. A., Agbo, H. A., Lassa, S, Kigbu, J. H., & Zoakah, A. I. (2013). Factors determining the choice of a place of delivery among pregnant women in Russia village of Jos North, Nigeria: Achieving the MDGs 4 and 5. *International Journal of Medicine and Biomedical Research*, 2(1), 23-27.
- Garba, S. N, Hellandendu, J, Ajayi A. D., Suleyman, F. H., & Oluwabamide. A. J. (2011). Maternal health seeking behavior among the Kambari of Niger State, Nigeria. *Nursing and Midwifery Council of Nigeria Research Journal*, 1(1), 29-37.
- Johnson, O. E., Obidike, P. C., Eroh, M. U., Okpon, A. A., Bassey, E. I., Patrick, P. C., Ebong P. E., & Ojumah, E. (2020). Choices and determinants of delivery location among mothers attending a primary health facility in Southern Nigeria. *Nigerian Postgraduate Medical Journal*, 27(1), 42-48.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Kucho, B., & Mekonnen, N. (2017). Delivery at home and associated factors among women in childbearing age, who gave birth in the preceding two years in Zala World, Southern Ethiopia. *Journal of Public Health and Epidemiology*, 9(6), 177-188.
- Kuhnt, J., & Vollmer, S. (2017). Antenatal care services and its implications for vital and health outcomes of children: evidence from 193 surveys in 69 low-income and middle-income countries. *BMJ open*, 7(11), e017122.
- Mahama, B., I. (2019). Factors that influence place of delivery choice among expectant mothers in Ghana. Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy Public Health. Retrieved from <https://scholarworks.waldenu.edu/dissertations>.
- Mezmur, H., Deselegn, B., & Semahegn, A. (2013). Factors affecting the choice of delivery place among women in Haramaya Woreda, Oromia, Regional State, and Eastern Ethiopia. *Journal of the Pharm innovation*, 2(10), 59-69.
- National Demographic Health Survey (NDHS) (2018) Nigeria demographic and health survey, national population commission Abuja, Nigeria.
- Ngowi, A., F, Kamazima, S., R, Kibusi, S, Gesase, A. and Bali, T. (2017). Women's determinant factors for the preferred place of delivery in Dodoma region Tanzania: A cross-sectional study. *Reproductive Health*, 14, Article number: 112.
- Raatikainen, K., Heiskanen, N., & Heinonen, S. (2007). Under-attending free antenatal care is associated with adverse pregnancy outcomes. *BMC Public Health*, 7, Article number 268.
- Sahoo, J., Singh, S. V., Gupta, V. K., Garg, S., & Kishore, J. (2015). Do socio-demographic factors still predict the choice of place of delivery: A cross-sectional study in rural North India. *Journal of Epidemiology and Global Health*, 5(4), S27-S34.
- Sibiya, M. N., Ngxongo, T. S. P., & Bhengu, T. J. (2018). Access and utilisation of antenatal care services in a rural community of eThekweni district in KwaZulu-Natal. *International Journal of Africa Nursing Sciences*, 8, 1-7.
- Sule, I. D., John-Mensah, O., Sadiq, L., Bashir, M., Sule, N., Emmanuel, H. A, Willie, B., & Muhammad, I. H. (2021) Nigeria: Why Nigeria's maternal mortality amongst highest in the world. *Daily Trust*, 9 January 2021. Retrieved from <https://allafrica.com/stories/202101090066.html>.
- WHO, UNICEF, UNFPA, & World Bank (2016). Trends in maternal mortality, 1990–2015. Geneva. World Health Organization.
- Yalem, T. (2010). Determinants of antenatal care, institutional delivery and skilled birth attendant utilization in SamreSaharti District, Tigray, Ethiopia. Master thesis in public health, Umea University Sweden, Pp. 25-30.